

SUPPLIED DIAGRAMS *The following to be included in the permit package:*

- Yes No A basic site diagram is supplied with permit package
- Yes No The location of electrical equipment is identified on the plan
- Yes No The Array configuration is shown
- Yes No If present, monitor circuitry shown on one-line and three-line diagrams
- Yes No A one-line and 3-line diagram is included with the package
The 3-line diagram indicates:
 - Yes No The combiner/junction box is identified
 - Yes No Conduit from Array to PV power source disconnect identified
 - Yes No Equipment grounding is specified
 - Yes No System grounding is specified
 - Yes No AC and DC disconnects specified
 - Yes No Neutral is broken and terminated at all disconnects
 - Yes No inverter is specified
 - Yes No Conduit from inverter-to disconnect-to panel is identified
 - Yes No Point of connection attachment method is identified

INVERTER INFORMATION

- Yes No Cut sheets are provided for the inverter
- Yes No The inverter is listed for utility interactive (see CEC list of eligible inverters)
- _____ Inverter Model Number
- _____ Maximum continuous output power at 40°C
- _____ Input voltage range of inverter

PV MODULE INFORMATION

- Yes No Cut sheets for the PV modules
- Yes No The modules are listed (see CEC list of eligible modules)
- _____ Open-circuit Voltage (VOC) from the listing
- _____ Maximum permissible system voltage from the listing label
- _____ Short-circuit current (ISC) from the listing
- _____ Maximum series fuse rating from the listing
- _____ Maximum power at standard test conditions (Pmax on label)
- _____ Voltage at Pmax from listing label
- _____ Current at Pmax from listing label

ARRAY INFORMATION

- _____ Number of modules in series
- _____ Number of parallel source circuits
- _____ Total number of modules
- _____ Operating Voltage= (number of modules in series x module voltage at Pmax)
- _____ Operating Current= (number of parallel source circuits x module current at Pmax)
- _____ Maximum system voltage (Voc x 1.13 x number of modules in series)
- _____ Short-circuit current (Isc x 1.25 x number of parallel source circuits)

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WIRING AND OVERCURRENT PROTECTION

- Yes No Wire type is 90°C wet rated
- Yes No Conductor ampacities are sufficient, (provide adjusted ampacity)
_____ Maximum PV source circuit current (Isc x 1.25)
_____ Minimum PV source circuit conductor ampacity (Isc x 1.25 x 1.25)
_____ Minimum PV output circuit conductor ampacity (Isc x 1.25 x 1.25 x number of parallel source circuits)
_____ Minimum inverter output circuit conductor ampacity (inverter output in Watts ÷ minimum operating voltage x 1.25 = min. inverter output ampacity)
- Yes No Source circuit overcurrent protection is sufficient
- Yes No Overcurrent protection on the Inverter output circuit is sufficient
- Yes No Point of connection meets provisions of NEC 690.64

ROOF INFORMATION (FOR ROOFTOP SYSTEMS)

- Yes No Are the conductors from the PV array run through the attic? (If yes, indicate conduit used for protection, must be metal)
_____ Weight of Array for rooftop systems (Lbs./SqFt including mounting hardware)
- Yes No Age of roof structure ≤ 30yrs old and Array weight ≤ 5Lbs/SqFt. No engineering calcs required
- Yes No Age of roof structure > 30yrs old, describe the structural elements
- Size of Rafters (e. g. 2" x 6")
 - Span of Rafters (e. g. 14')
 - Spacing of Rafters (e. g. 24" OC)
- _____ Identify roofing type (e. g. comp. shingle, masonry tile, shake, etc.)
- Yes No Provided detail for PV panel mounting to the framing members, including weatherization
- _____ Plumbing and mechanical vents are not to be covered by array configuration

GROUND MOUNTED STRUCTURE (FOR GROUND-MOUNTED STRUCTURES)

- Yes No The weight of the Array is indicated (Lbs./SqFt – including mounting hardware)
- Yes No Details of Array supports, framing members, foundation posts, and footings are provided)
- Yes No Information on the mounting structure(s) construction is provided (If the mounting structure is unfamiliar to the local jurisdiction and is more than 6' above grade, it may require engineering calculations)

INSPECTION GUIDELINES FOR ALL PHOTOVOLTAIC SYSTEMS

- Installing contractor on site with voltage meter to verify voltage present.
- Equipment, conduit, and wiring is installed according to the approved plans.
- All approved plans are to be onsite for the inspector's use during the inspection.
- If any variations exist between the approved plans and the site installation, those changes shall be noted on the approved plans along with any necessary explanation as to why the change was required.
- If substantial changes are found in the field installation, the as-built changes may need to be referred back to plan review to ensure code compliance.

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FIELD INSPECTION CHECKLIST FOR ELECTRICAL ONE-LINE

- PV module model number matches plans/cut sheets
- PV modules are properly grounded (*for grounded systems*)
 - Modules should be grounded with lugs or equipment grounding screws on each module and mounting rail or some equivalent grounding method
 - Equivalent grounding could be stainless or bi-metallic star washers bonding anodized aluminum module frames to roof-mounted rails and attaching grounding wire to a lug on the rails.
 - Another method is to attach a bonding wire from each module to a lug on the rails with the grounding wire attached to a lug on the rails
- Check that the wiring is consistent with the call outs on the plans
- Check that cable and conduits are properly supported
- Verify neutral wire is broken at all disconnects

SIGN INSTALLATION REQUIREMENTS

- Sign Construction
 - Signs should be of sufficient durability to withstand the environment placed in
 - For outdoor signs, the sign should be either metallic or plastic with engraved or machine printed letters, or electro-photo plating, in a contrasting color to the sign background
 - Plexiglas covered paper or laminated paper directories are also acceptable provided that the signs are sufficiently protected from the environment placed in
 - Signs shall be permanently attached to equipment or structure adjacent to equipment
- Provide a sign identifying DC power system attributes at DC disconnect (690.53)
This sign must include
 - Rated maximum operating current (sum of parallel source circuit operating currents)
 - Rated maximum operating voltage (sum of series modules operating voltage in source circuit)
 - Maximum system voltage (NEC 690.7)
 - Short-circuit current (NEC 690.8)
- Provide a sign for AC point of interconnection (NEC 690.54)
This sign must include
 - Rated AC operating current
 - Nominal operating voltage (120, 208, 240, or 480)
- Provide a sign identifying switch for alternative power system (NEC 690.56)
 - If this disconnect is not located at the service disconnect follow NEC requirement NEC 690.56 (B) ...permanent plaque or directory providing location of service disconnecting means and photovoltaic system disconnecting means.
- Provide a sign at utility interactive inverter (NEC 690.5 (C))
 - Warning electric shock hazard if a ground fault is indicated. Normally grounded conductors may be ungrounded and energized.

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